WATER POLLUTION & THE LAND

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WATER POLLUTION & THE LAND

The way we use our land — the chemicals and other substances we apply to it, the removal of natural vegetation and, many times, just our careless habits — is seriously affecting the water quality in our rivers and streams.

AGRICULTURE

Agricultural lands are the largest source of soil erosion in Illinois, accounting for 86 per cent of the 165 million tons eroded annually. Seventy-five per cent comes from gently sloping cropland, and almost 10 per cent from gully and streambank erosion. As much as 7.7 tons of sediment per acre is being deposited annually in some Illinois reservoirs, diminishing water storage capacity.

Nutrients like nitrogen and phosphorus from fertilizer application and chemicals from pesticides applied to the land are also washed into rivers and streams with sediment. Livestock wastes, if not properly managed, contribute organic matter, nutrients and bacteria to rivers and streams.

Such nutrient enrichment robs the water of oxygen with excessive plant growth and decay. Chemicals from some pesticides accumulate in the tissues of fish and other organisms, making human consumption unsafe.

Soil conservation techniques, used by some Illinois farmers for years, can help to keep sediment and other substances from reaching rivers and streams. However, wider application of these measures is needed. A 1970 study showed that 61.6 per cent of Illinois land is in need of soil conservation measures.

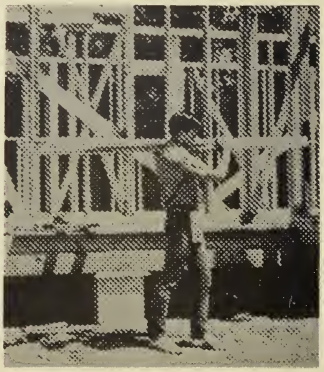
URBAN AREAS

In urban areas much of the natural ground cover which filters many pollutants from running water, has been covered with pavement for streets, sidewalks and parking lots.

Petroleum products like oil and transmission fluids as well as soil particles accumulate on these surfaces. Lead comes from cars burning leaded gasoline and toxic chemicals such as asbestos and mercury from a variety of sources. Industrial fallout, organic debris, litter, nitrogen and phosphorus from fertilizers and pesticides used on lawns and golf courses and salts on roads in winter are all potential water pollutants. Heavy metals, acids and complex industrial wastes seep from improperly sealed landfills.

In a heavy rain, stormwater carrying all these substances may by-pass municipal treatment and flow directly into streams, even in larger cities where sanitary sewers and storm sewers are combined. In smaller towns, sanitary and storm sewers are usually separate, so no treatment is provided for stormwaters.

Intensified street sweeping, cleaning of catch basins and litter control programs are a few ways to begin controlling pollutants from urban areas. Others include building detention basins in parking lots where pollutants can settle out before water is discharged. Grass water ways to filter pollutants can be used instead of concrete for drainage channels and downspouts on homes disconnected from sewer lines.



CONSTRUCTION

As growth occurs on the fringes of our urban areas, large amounts of soil are displaced in clearing and grading sites for homes, shopping centers and highways.

In some places local ordinances require builders to employ soil erosion control measures like seeding and fertilizing areas and covering with straw, wood chips, fiberglass mesh or mats of fibrous materials. However, in most places, no such ordinances exist.

Erosion from bare land surfaces produces deep cuts in hillsides as well as soil loss from flat areas. Often these conditions continue long after construction is ended.

MINING

About 50 coal mines in Illinois are producing 60 to 70 million tons annually in about 20 counties. Past coal mining practices have led to pollution problems on about 22,000 acres of abandoned surface and underground mined lands. Some of the most severe problems exist in the Kaskaskia, Big Muddy and Saline River basins.

When coal is extracted from the earth a large amount of unusable material remains behind. Mine operators regularly piled this refuse, rich in minerals, near the mined area, left it in underground shafts or used it to build roads into the area.

When rainfall percolates through this debris, sulfuric acid, iron and other metals like aluminum and manganese are washed into nearby streams. Acids can be toxic to aquatic life. Minerals form a coating on stream beds which can smother bottom-dwelling organisms and tax the oxygen level of water.

Now mine operators must develop a reclamation plan to receive a mining permit. Such plans, which must provide for topsoil replacement, often call for the burial of wastes in mined areas, halting polluted runoff. Much work still needs to be done in abandoned mined areas.

CLEAN WATER PLANNING

We need clean water for drinking, agriculture and industrial use, commercial and residential development and recreation. The cost of cleaning up our polluted waters is getting higher and higher.

Illinois citizens are meeting throughout the state to develop programs for controlling water pollutants from our land surfaces. A state plan, which must address local needs and priorities, will be submitted to the Governor by fall 1978.

For more information on Illinois Environmental Protection Agency's state network of local advisory committees and planning efforts, contact an IEPA regional coordinator:

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